COLORADO RIVER RECOVERY PROGRAM
FY 2002 ANNUAL PROJECT REPORT

RECOVERY PROGRAM
PROJECT NUMBER: 22i

I. Project Title: **Abundance Estimates for Colorado pikeminnow in the Middle Green River /Yampa River System**

II. Principal Investigator(s):

Kevin Bestgen/ John Hawkins/ Gary White
Department of Fishery and Wildlife
Colorado State University
Ft. Collins, CO 80523
voice: KRB (970) 491-1848,
JAH (970) 491-2777
fax: (970) 491-5091
email: *kbestgen@picea.cnr.colostate.edu, jhawk@lamar.colostate.edu, gwhite@cnr.colostate.edu*

Kevin Christopherson
Utah Division of Wildlife Resources
152 East 100 North
Vernal, Utah 84078
voice: (435) 781-5315
fax: (435) 789-8343
email: *nrdwr.rbrunson@state.ut.us*

C. Kitcheyan, G. B. Haines, T. Modde
U. S. Fish and Wildlife Service
1380 S. 2350 W.
Vernal, Utah 84078
voice: (435) 789-0354 X-12
fax: (435) 789-4805
email: *tim_modde@fws.gov*
Chris_Kitcheyan@fws.gov, bruce_haines@.fws.gov

Thomas P. Nesler
Colorado Division of Wildlife
317 West Prospect
Fort Collins, CO 80524
voice: (970) 472-4384
email: *tom.nesler@state.co.us*

III. Project Summary:

Sampling conducted during this project is designed to obtain capture-recapture data needed to estimate abundance of Colorado pikeminnow *Ptychocheilus lucius* in the mainstem Green River upstream of the White River and the Yampa and White rivers. Abundance estimates of endangered Colorado pikeminnow are needed to better monitor population status and provide benchmarks against which progress toward recovery can be measured. Work started in the spring of 2000 and will conclude in 2003. The primary goal each year was to capture and mark as many Colorado pikeminnow as possible during at least three different springtime sampling occasions. The U.S. Fish and Wildlife sampled the White River, Utah Division of Wildlife Resources sampled the Green and Duchesne rivers, and Colorado State University sampled the Yampa River. Sampling occurred during spring runoff and ended before pikeminnow spawning migration. Electrofishing was the primary sampling technique in 2002, but in prior years was supplemented with trammel and fyke nets. In 2002,

fyke nets were not used and trammel net effort was minimal because of low water conditions. In 2000, 1151 Colorado pikeminnow were captured and in 2001 770 Colorado pikeminnow were captured. In 2002, 328 Colorado pikeminnow were captured during all sampling efforts.

IV. Study Schedule: Initial Year 2000
Final year 2003

V. Relationship to RIPRAP *(Version: March 8, 2000)*:
General Recovery Program Support Action Plan:

V.	Monitor populations and habitat and conduct research to support recovery actions (Research, monitoring, and data management).
V.A.	Measure and document population and habitat parameters to determine status and biological response to recovery actions.
V.A.1.	Conduct Standardized Monitoring Program.
V.A.1.a.	Evaluate and refine procedures periodically, as appropriate. (With emphasis on expanding ISMP to monitor response of fish community and endangered fishes to major recovery actions.)
V.B.	Conduct research to acquire needed life history information.
V.B.1.	Identify significant deficiencies in life history information and needed research (will come partially from IMOs).
V.B.2.	Conduct appropriate studies to provide needed life history information.

VI. Accomplishment of FY 2002 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task 1.	Feb.-March.	Literature research, order and prepare equipment, develop standard protocol for field crews.
Task 2.	April.	Scout locations, final equipment preparation.
Task 3.	Apr.-July.	Sample each river on at least three sampling occasions.
Task 4.	September.	Sample appropriate canyon reaches to evaluate fish movement.
Task 5.	Jan- Sept	Sampling team coordination, data entry, and analysis.
Task 6.	December.	Write Recovery Program summary report.

Most tasks were completed in year 2002. The Standard Operating Procedure Manual provided an overview of the work, sampling approach, endangered fish handling and tagging procedures and standardized data forms. Periodic updates among crews during the sampling

period allowed refinements to sampling approaches (Tasks 1 & 5). Crews conducted reconnaissance of remote river reaches to find boat launch and take-out sites and obtained permission to access some sites on private property. In addition, all three crews rigged new equipment specific for the sampling approach (Task 2). The most effective design was systematically sampling both shorelines with electrofishing gear and using the block and shock method of sampling in backwaters. Because low flows did not flood many backwaters, few trammel nets and no fyke nets were used. Three sampling occasions were completed in the White River and Green River and four were completed in the Yampa river in 2002. Additional Green River sampling included one day of effort in Split Mountain Canyon (Task 4). The fourth sampling occasion on the Yampa River covered approximately half of the river miles that were completed during each of the previous three sampling occasions because boat access was limited by low water. We need to further evaluate the usefulness of captures for abundance estimation from the last sampling occasion conducted on each river system because of the possibility of fish movement out of some reaches and the inability to sample much of the rivers at lower flows experienced at post-runoff. We will determine if Colorado pikeminnow started their spawning migration based on declining capture rates relative to prior sampling occasions and on state of reproductive readiness of fish when captured.

In 2002, sampling occurred mid-April through mid-July (Task 3, Table 1). Electrofishing effort included 182 hours on the Green River, 178 hours on the White River, and 166 hours on the Yampa River. Effort had to be estimated for three samples on the Green and five samples on the White because of data recording errors. Effort for twenty-three Yampa River samples was estimated from the VVP in the other boat because a replacement VVP lacked a time recorder. Two electrofishing boats were used in all reaches on all three rivers. Sampling effort on the Yampa and Green rivers included less than an hour using the block and shock method in backwaters and flooded tributaries. Green River Colorado pikeminnow captured in 2002 during all sampling occasions totaled 110 (n = 738 in 2000 and 396 in 2001). A total of 185 Colorado pikeminnow were captured in the White River in 2002 (n = 315 in 2000 and 239 in 2001), and 33 were captured in the Yampa River (n = 81 in 2000 and 141 in 2001). In 2002, there were seven Colorado pikeminnow recaptured in the Green River, (n = 83 in 2000 and 36 in 2001), 22 in the White River (n = 26 in 2000 and 26 in 2001), and none in the Yampa River (n = 6 in 2000 and 21 in 2001). Recaptures reported are for fish captured only in that year, not fish marked in previous years. Abundance estimates for each year will be based only on recaptured fish that were marked during previous sampling occasions in each year.

Fourty-eight razorback suckers and one razorback x flannelmouth sucker hybrid were also captured; most were from the Green River between Split Mountain and Ouray Bridge on the Green River. Another 34 razorback suckers too small to PIT tag were also captured and released in the Green River. Two razorback suckers were captured in the White River.

The primary shortcoming of 2002 efforts was that extremely low flows precluded sampling in

most canyon reaches as planned in Task 4. One day of sampling was completed at Split Mountain Canyon; Lodore and Whirlpool canyons were sampled in a different project.

VII. Recommendations: Complete 2003 field work and write the final report.

VIII. Project Status: This project will continue in 2003 and should be considered *"On Track and On-going*".

IX. FY 2002 Budget Status

A. Funds Provided: $150,000
B. Funds Expended: $141,000.
C. Difference: $9,000, for data analysis and data verification remain.
D. Percent of the FY 2002 work completed, and projected costs to complete: about 90% completed, no additional funds needed, remaining funds for completion and review of annual abundance estimate.
E. Recovery Program funds spent for publication charges: None

X. Status of Data Submission (Where applicable):

PIT Tag data files will be submitted by individual agencies (USFWS, UDWR, and CSU) by January 2003.

XI. Signed: *John Hawkins and Kevin Bestgen* 12-06-2002
Reporting Principal Investigator Date

Filename= 22iMidGreenRCPMpopest.wpdD:\Documents\RIP Annual Reports\Year 2001 Annual Reports\FINAL Middle Green R CPM Pop Estimate-Annual Rpt 2001.wpd

Table 1. Sampling dates and effort middle Green/ Yampa population of Colorado pikeminnow.

	Dates	Days Sampled	River Miles Sampled	Total Effort (hours)			Number of Pikeminnow Capture Events[1]
				Trammel/ Electro-fishing	Fyke Nets	Electro-fishing	
Green River							
Trip 1	April 30 – May 15	8	333-246	0	0	55	37
Trip 2	May 16 – 30	9	333-246	*	0	69	43
Trip 3	May 31 – June 10	7	333-246	0	0	56	29
Trip 4	July 11	1	326-319	0	0	3	1
Totals		35			0	182	110
Yampa River							
Trip 1	April 25 - May 3	8	119-45	0	0	46	11
Trip 2	May 11 – 19	8	122-45	0	0	52	11
Trip 3	May 26 - June 3	9	122-50	.19	0	57	9
Trip 4	June 12 – 16	5	119-87	0	0	10	2
Totals		30		.19	0	166	33
White River							
Trip 1	April 15 – 23	5	104-0	0	0	61	64
Trip 2	April 26 – May 3	5	104-0	0	0	64	49
Trip 3	May 8 - 24	9	104-0	0	0	53	72
Totals		19				178	185

[1] Total Number of pikeminnow captured including recaptures. * Effort not recorded.